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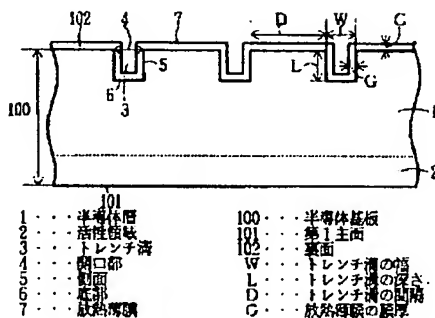
(54) **SEMICONDUCTOR DEVICE**

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(57) Abstract:

PROBLEM TO BE SOLVED: To provide a semiconductor device having an improved heat radiation efficiency on a rear face.

SOLUTION: An active region 2 is formed in a surface layer of a first principal plane 101 of a semiconductor substrate 100, and trenches 3 are formed in a rear face 102 which is a second principal plane, to turn the rear face 102 uneven (concave where trenches are formed and convex where trenches are not formed). On the uneven rear face 102, a heat radiation thin film 7 formed of such a material as to have a larger coefficient of thermal conductivity than the semiconductor substrate 100 (i.e., a thin film for heat radiation) is formed along the uneven surface. A ratio of the depth L to the width W of the trenches 3, that is, an aspect ratio (L/W) is set to 1 or above and 50 or below. The width of the trenches 3 and a distance D between the trenches 3 are set between 1 μm and 100 μm .



1 . . . 半導体層
2 . . . 活性領域
3 . . . トレンチ溝
4 . . . 開口部
5 . . . 側面
6 . . . 底面
7 . . . 放熱薄膜

100 . . . 半導体基板
101 . . . 第1主面
102 . . . 第2主面
W . . . トレンチ溝の幅
L . . . トレンチ溝の深さ
D . . . トレンチ溝の間隔
C . . . 放熱薄膜の厚み